converging on either the lip portion or the substrate, said top surface being configured to be of substantially the same height as a top surface of the substrate when loaded;

a heating element embedded below the concave portion;

a radio-frequency electrode of a metal element embedded below the concave portion; and

no mechanical mechanism to clamp the substrate on the substrate-supporting surface.

4. (Amended) The apparatus as claimed in Claim 1, wherein said concave portion comprises a slanting ~~portion and a flat~~ portion.

7. (Amended) The apparatus as claimed in Claim 1, wherein the radio-frequency electrode of a metal element is embedded above said heating element.

10. (Amended) A plasma CVD apparatus, comprising:

a vacuum-pumped reaction chamber;

a semiconductor substrate-supporting apparatus for supporting and heating a single semiconductor substrate inside the vacuum-pumped reaction chamber, said substrate-supporting apparatus comprising:

(i) a substrate-supporting surface having a concave portion including a depression slanting toward the center of the substrate-supporting surface, wherein only a peripheral portion of the back surface of the substrate, when loaded, contacts the slanting surface of the concave portion;

(ii) a surface peripheral portion formed around the substrate-supporting surface, said surface peripheral portion having a lip portion which protrudes in a ring shape, said lip portion having a top surface and a slanted inner side surface to prevent a plasma from converging on either the lip portion or the substrate, said top surface being configured to be of substantially the same height as a top surface of the substrate when loaded;

(iii) a heating element; and

(iv) no mechanical mechanism to clamp the substrate on the substrate-supporting surface.

13. (Amended) The apparatus as claimed in Claim 10, wherein said concave portion comprises a slanting portion and a flat portion.